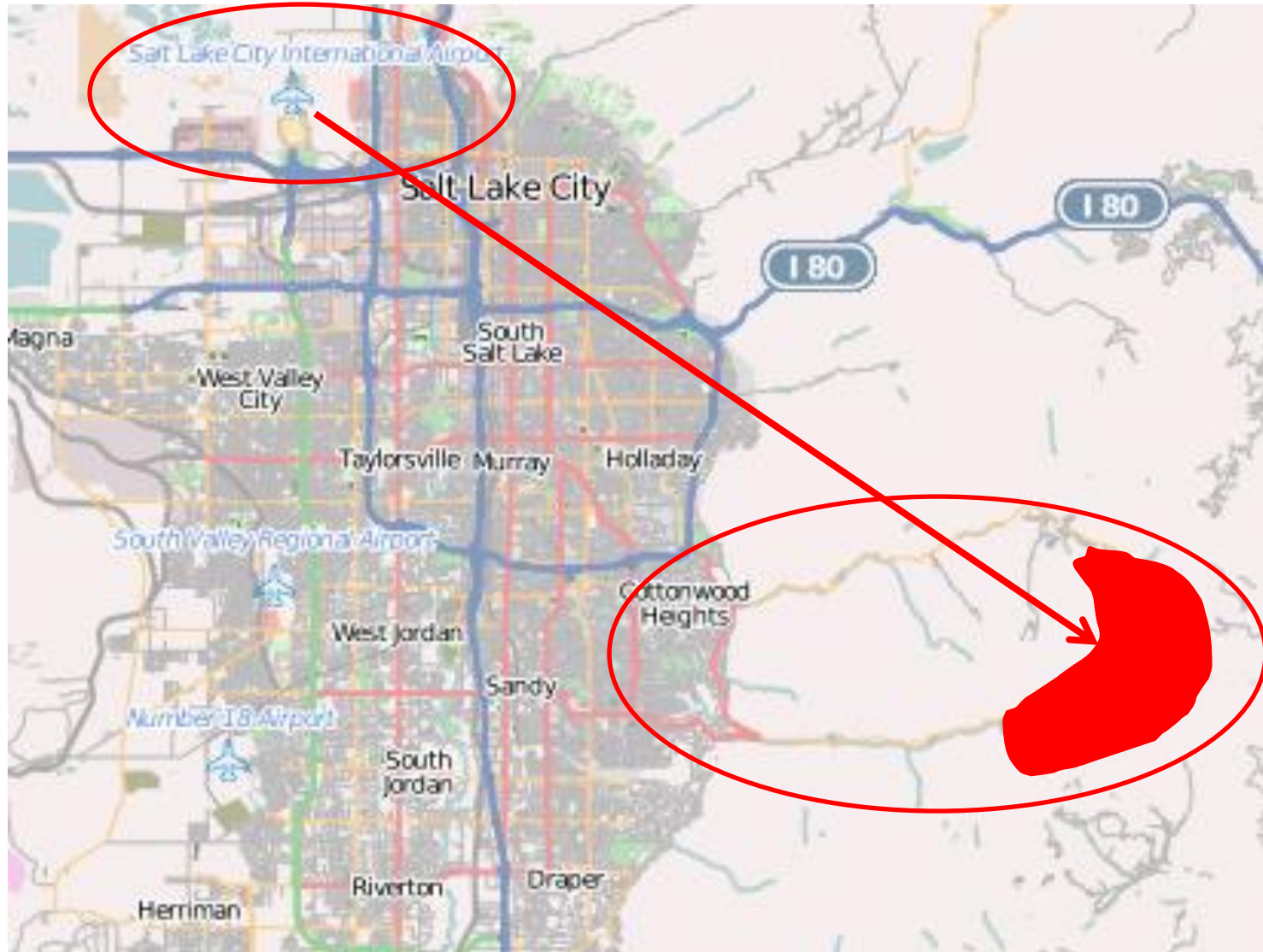


# GIS Decision Support Tool for NEPA

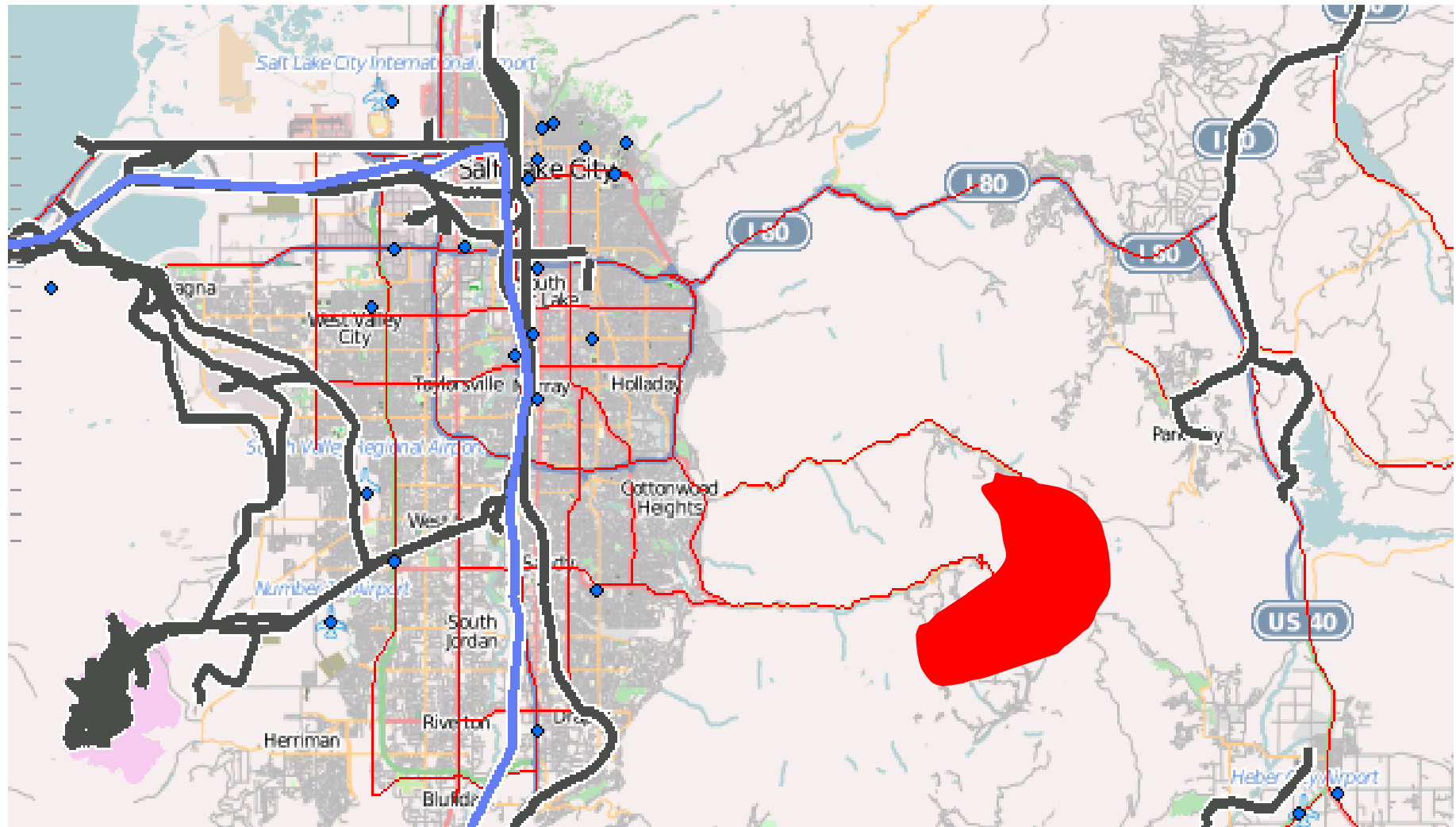
## Use Case of “GIS Inventory for Environmental Professionals”

The City of Salt Lake, Utah is looking to increase transportation capacity from their main airport “Salt Lake City International Airport” to their ski resorts in the Wasatch Mountain Range Southeast of the city center.

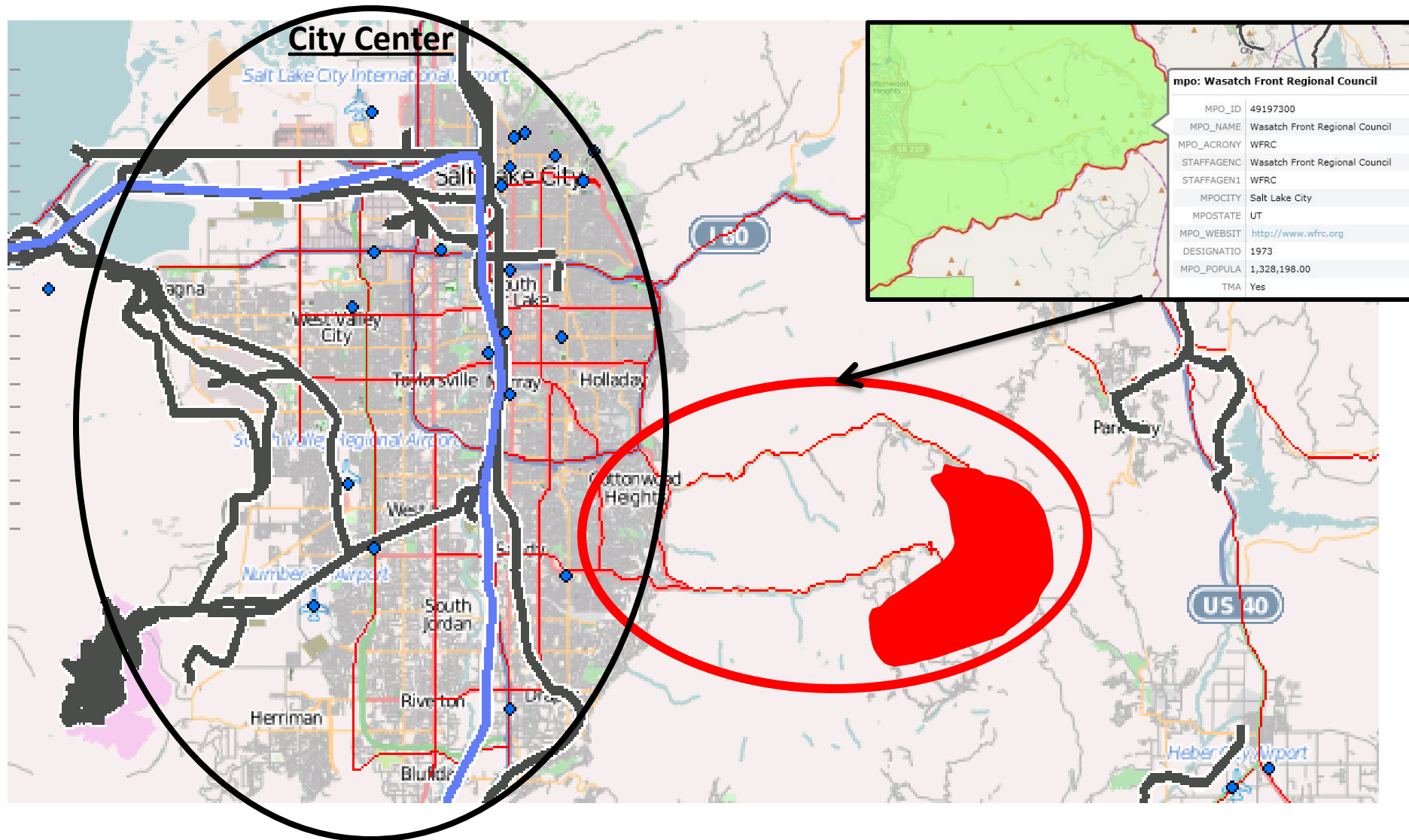
# Case Study: Proposed Action



Using the “GIS Inventory for Environmental Professionals” we layered on: FRA Rail Network, National Highway Monitoring System, and US Airports. This gives us a picture of the existing transportation infrastructure capable (with enhancements or extensions) of meeting the purpose and need.



Assuming for a moment that within the city center, potential development to meet the purpose and need will likely be limited to enhancing existing transportation infrastructure networks. **SO, we will focus our review east of the urban-wildland interface (circled in red)**



## **First Step:**

lets look into the standard set of layers to rule out extraordinary circumstances and determine appropriate consultations.

**FEMA Floodplains** - *for EO 11988 “Floodplain Management”*

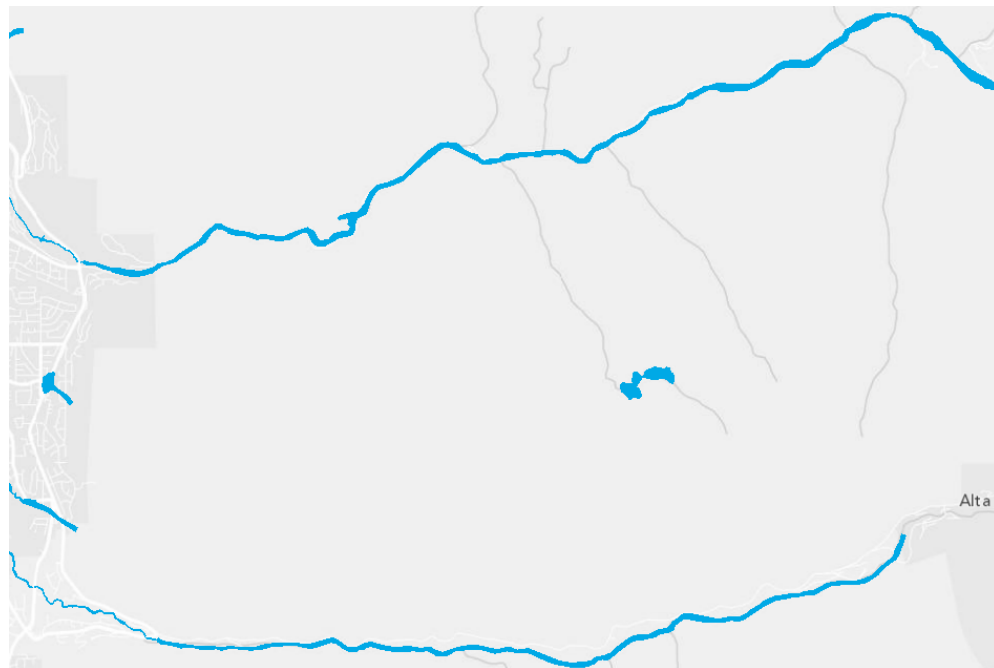
**USFWS Wetlands** – *for CWA Section 404*

**EPA Office of Water “WATERS”** – *for Navigable & Impaired Waters*

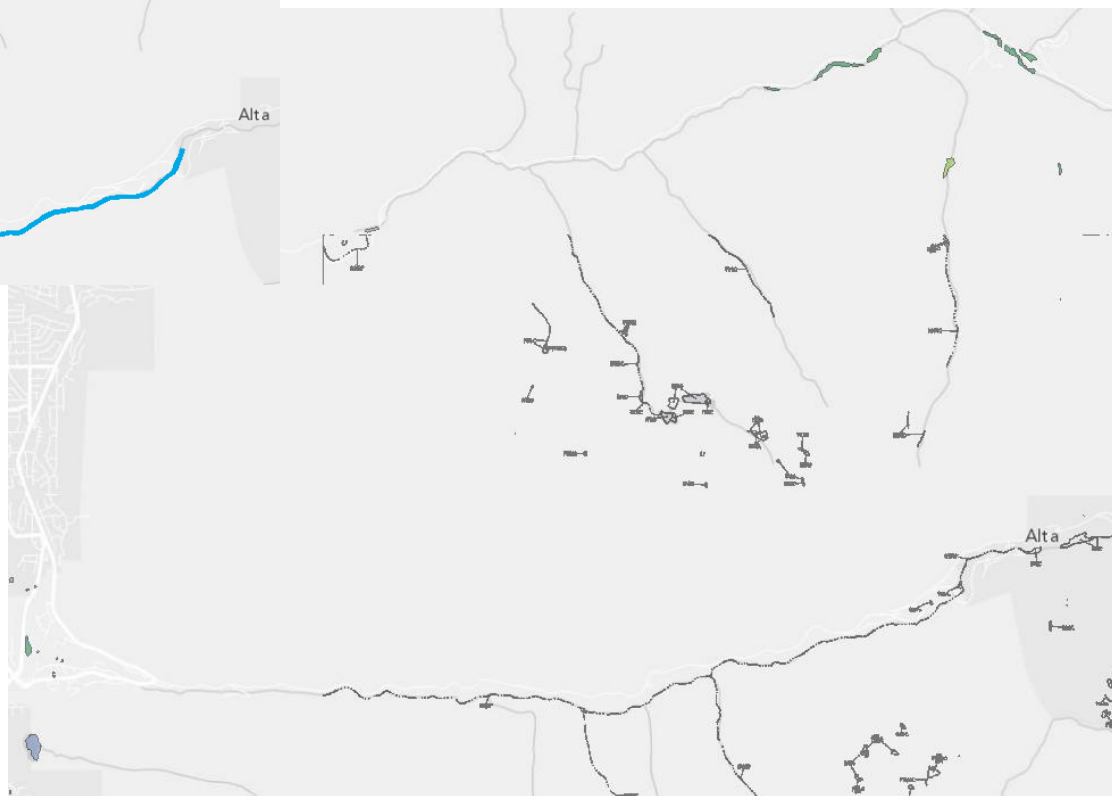
**USFWS T&E and Candidate Species** – *for ESA Section 7 or 10*

**NPS National Register of Historic Places** – *for NHPA Section 106*

## FEMA Floodplains



## USFWS Wetlands



**NATIONAL PARK SERVICE  
NATIONAL REGISTER  
OF HISTORIC PLACES**

**Stairs Station Hydroelectric Power Pl...**

Historic Place Name: Stairs Station Hydroelectric Power  
Plant Historic District  
Address: UT 152  
City: Salt Lake City  
County: Salt Lake  
State: UTAH

Geographic Coordinates:  
Latitude: 40.62469  
Longitude: -111.7458

NPS Reference Number: 89000284  
Date Listed: 19890420  
Notes: Electric Power Plants of Utah MPS  
Type: centroid  
Geocode Match: 0

A Service of:  
[National Register of Historic Places](#)  
[National Park Service](#)

**Wasatch Mountain Club Lodge**

Historic Place Name: Wasatch Mountain Club Lodge  
Address: SE of Salt Lake City  
City: Salt Lake City  
County: Salt Lake  
State: UTAH

Geographic Coordinates:  
Latitude: 40.59598  
Longitude: -111.5845

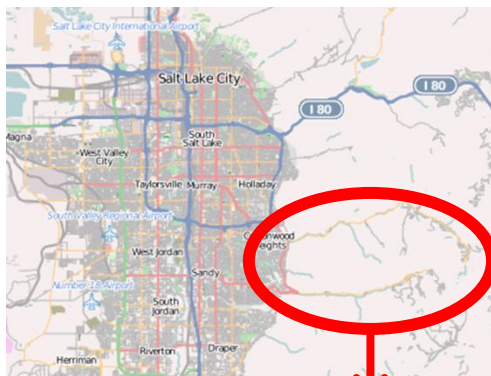
NPS Reference Number: 80003935  
Date Listed: 19801110  
Notes:  
Type: point  
Geocode Match: 0

A Service of:  
[National Register of Historic Places](#)  
[National Park Service](#)

**NATIONAL PARK SERVICE**

\*It should be noted that using the NRHP layer does not absolve an agencies responsibility to consult with the SHPO/THPO/others to locate properties that may be eligible for listing





U.S. Fish & Wildlife Service

## Species Reports

Environmental Conservation Online System

 Search

### Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the [IPaC](#) application.

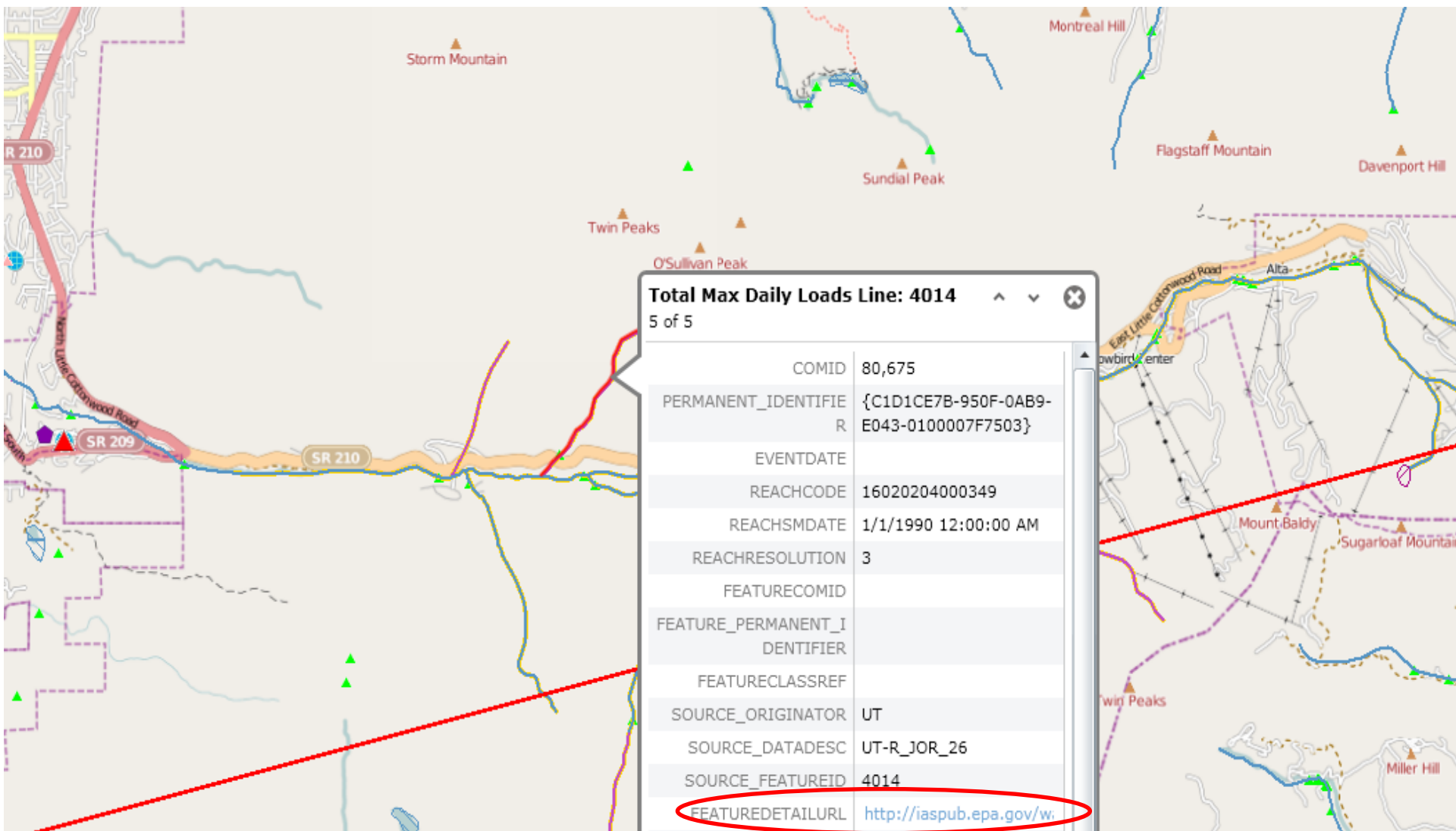
County: Salt Lake, UT

Group	Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Action Status	Recovery Plan Stage
Birds	<a href="#">Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)</a>	Western U.S. DPS	Candidate	<a href="#">Sacramento Fish And Wildlife Office</a>	-	-	-
Fishes	<a href="#">Least chub (<i>Notichthys phlegenthontis</i>)</a>		Candidate	<a href="#">Utah Ecological Services Field Office</a>	-	-	-
	<a href="#">June sucker (<i>Chasmistes liorus</i>)</a>		Endangered	<a href="#">Utah Ecological Services Field Office</a>	<a href="#">June Sucker</a>	<a href="#">View Implementation Progress</a>	Final
Mammals	<a href="#">Canada Lynx (<i>Lynx canadensis</i>)</a>	(Contiguous U.S. DPS)	Threatened	<a href="#">Montana Ecological Services Field Office</a>	<a href="#">Recovery Outline for the Contiguous United States Distinct Population Segment of Canada Lynx (<i>Lynx canadensis</i>)</a>	Recovery efforts in progress, but no implementation information yet to display.	Outline

Export options: [CSV](#) [EXCEL](#) [XML](#) [PDF](#)



# EPA Office of Water – Water Monitoring Program



## Watershed Assessment, Tracking & Environmental Results



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You are here: [EPA Home](#) » [Water](#) » [WATERS](#) » [Water Quality Assessment and TMDL Information](#) » TMDL Report

### TMDL Document for Little Cottonwood Creek Tmdl

**TMDL ID:** 4014      **TMDL Name:** Little Cottonwood Creek Tmdl  
**State/Tribe:** Utah      **TMDL Date:** 09/09/2002  
**EPA Action:** EPA Approved      **Comments:** ZINC LOAD BASED ON FLOW, TWO CRITICAL POINTS; LLC BELOW HOWLAND AND LLC BELOW WASATCH, 2.7 - 125 LBS/DAY.

#### TMDL Documents

Click on the underlined Document Type to retrieve the actual document in PDF format.

Document Type	Comments
<a href="#">TMDL Decision Letter</a>	
<a href="#">TMDL Document</a>	

#### TMDL Pollutant: Zinc

<b>Total Waste Load Allocation:</b>	<b>Total Load Allocation:</b> 2.7
<b>Explicit Margin Of Safety:</b> .27	<b>Implicit Margin Of Safety:</b> Not Reported
<b>Units for Total Waste Load Allocation,</b>	<b>TMDL Pollutant Source Type:</b> Nonpoint Source
<b>Total Load Allocation, and Margin of Safety:</b> Lbs/Day	
<b>TMDL End Point:</b> Zinc Concentrations Meeting Acute Wqs; Macroinvertebrate Populations Below The Wasath Drain Tunnel.	

#### Listed Water Causes of Impairment for Zinc

Click on the underlined Waterbody ID for a Listed Water Information Report. Click on the underlined "Waterbody Map" literal for a map of the Listed Water.

Waterbody ID	Waterbody Name	Map	Cycles Listed	Cause(s) of Impairment Addressed
<a href="#">UT-R JOR 26</a>	Little Cottonwood Creek-2	Data Unavailable	1996, 1998, 2000, 2002	Zinc

*No methods have been reported to EPA for this TMDL.*



**TOTAL MAXIMUM DAILY LOAD  
FOR DISSOLVED ZINC  
IN LITTLE COTTONWOOD CREEK**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 8**

**999 18<sup>TH</sup> STREET - SUITE 300**

**DENVER, CO 80202-2466**

**<http://www.epa.gov/region08>**

Ref: 8EPR-EP

Mr. Don A. Ostler, Director  
Division of Water Quality  
Department of Environmental Quality  
2800 North 1460 West  
P.O. Box 144870  
Salt Lake City, Utah 84114-4870

Re: TMDL Approvals  
*Little Cottonwood Creek (zinc)*

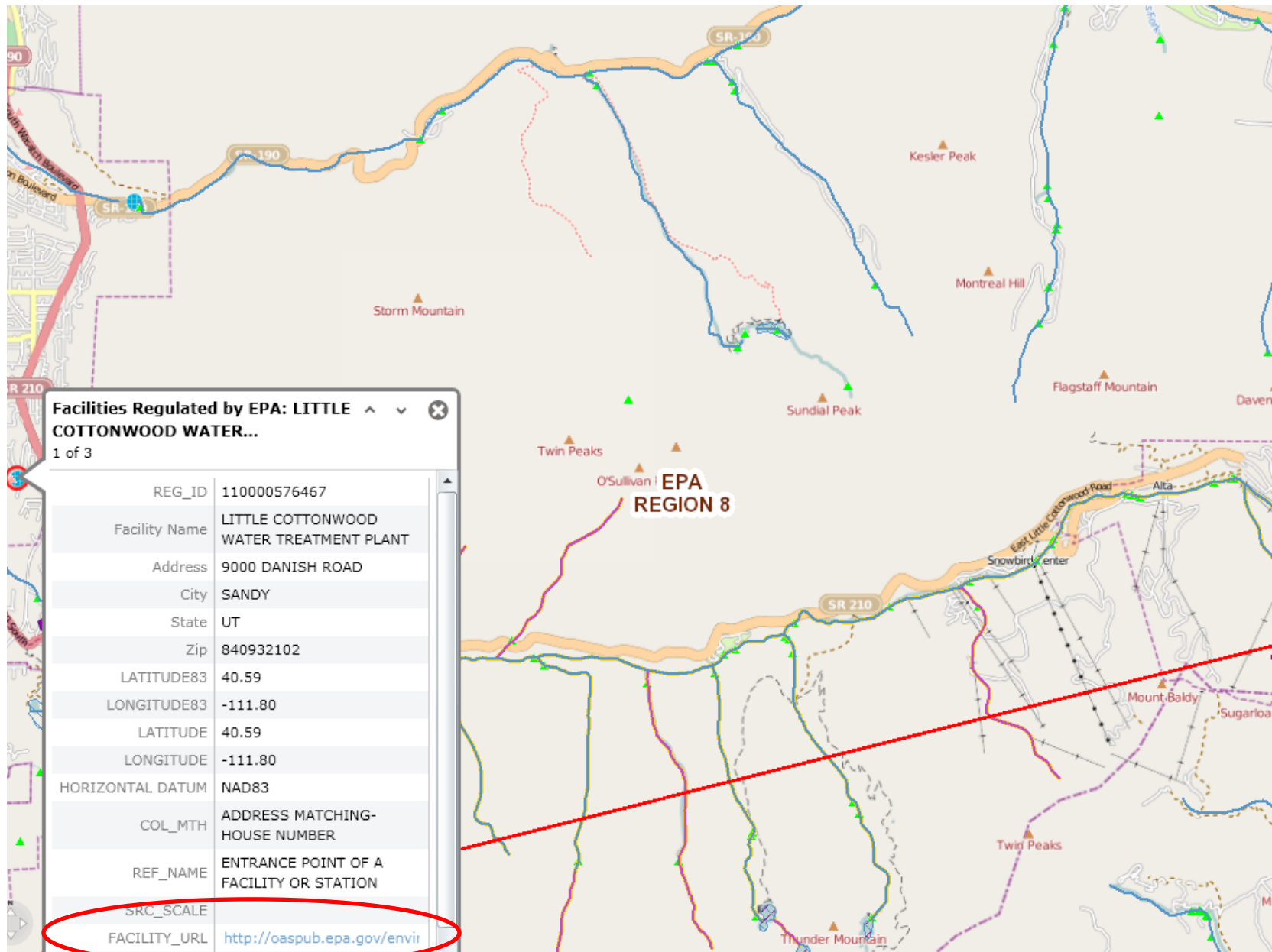
Dear Mr. Ostler:

We have completed our review of the total maximum daily load (TMDL) as submitted by your office for the Hyrum Reservoir. The TMDL is included in the document entitled Total Maximum Daily Load for Dissolved Zinc in Little Cottonwood Creek; (Utah Department of Environmental Quality/Division of Water Quality, March 2002). This document was transmitted to us for review and approval in correspondence dated April 1 2002 and signed by you. In accordance with the Clean

## **Second Step:**

Lets apply the rest of the ~100 layers in the GIS Inventory to see what else we can find

# Facilities Regulated by EPA & EPA Cleanup Sites



# EPA Environmental Interest Profile



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Environmental  
Interest  
Profile

## Environmental Interest Profile for this Location

Report  
an  
Error

To improve public health and the environment, the EPA collects information about facilities or sites subject to environmental regulation. This summary lists the environmental interests which pertain to the selected geographic location. Where available, this information is presented below in a dynamic report via the "Launch Report" button. When viewing these reports, if you find erroneous data, please click on the "Report an Error" button to notify the EPA of data errors.

### LITTLE COTTONWOOD WATER TREATMENT PLANT

9000 DANISH ROAD  
SANDY, UT 49035

Environmental Interest information **with reports** for this Location. Please click on the "Launch Report" button to see a detailed report.

[Permit Compliance System \(PCS\)](#)

Interest Type: NPDES NON-MAJOR

ID: UTG640001

[Launch Report](#)

Other sources of EPA Environmental Information for this Location. Please click on the "Launch Report" button to see more details.

[Enforcement & Compliance History Online \(ECHO\)](#)

[Launch Report](#)

[Facility Registry System \(FRS\)](#)

[Launch Report](#)

[My Environment](#)

[Launch Report](#)

Environmental Interest information with **no reports** for this Location. EPA does not have an electronic report on the following Facilities or Sites.

[National Pollutant Discharge Elimination System \(NPDES\)](#)

Interest Type: ICIS-NPDES NON-MAJOR

ID: UTG640001



# EPA Environmental Interest Profile



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You are here: [EPA Home](#) » [Envirofacts](#) » Environmental Interest Profile



Environmental  
Interest  
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## Environmental Interest Profile for this Location

Report  
an  
Error

To improve public health and the environment, the EPA collects information about facilities or sites subject to environmental regulation. This summary lists the environmental interests which pertain to the selected geographic location. Where available, this information is presented below in a dynamic report via the "Launch Report" button. When viewing these reports, if you find erroneous data, please click on the "Report an Error" button to notify the EPA of data errors.

### DAVENPORT AND FLAGSTAFF SMELTERS

1 MILE W OF INTERSECTION USH 209 AND 210  
SANDY, UT 49035

Environmental Interest information **with reports** for this Location. Please click on the "Launch Report" button to see a detailed report.

[Comprehensive Environmental Response, Compensation, and Liability Information System \(CERCLIS\)](#)

Interest Type: SUPERFUND NPL

ID: UTD988075719

[Launch Report](#)

Other sources of EPA Environmental Information for this Location. Please click on the "Launch Report" button to see more details.

[Cleanups in My Community \(CIMC\)](#)

[Launch Report](#)

[Enforcement & Compliance History Online \(ECHO\)](#)

[Launch Report](#)

[Facility Registry System \(FRS\)](#)

[Launch Report](#)

[My Environment](#)

[Launch Report](#)

Environmental Interest information with **no reports** for this Location. EPA does not have an electronic report on the following Facilities or Sites.

[Integrated Compliance Information System \(ICIS\)](#)

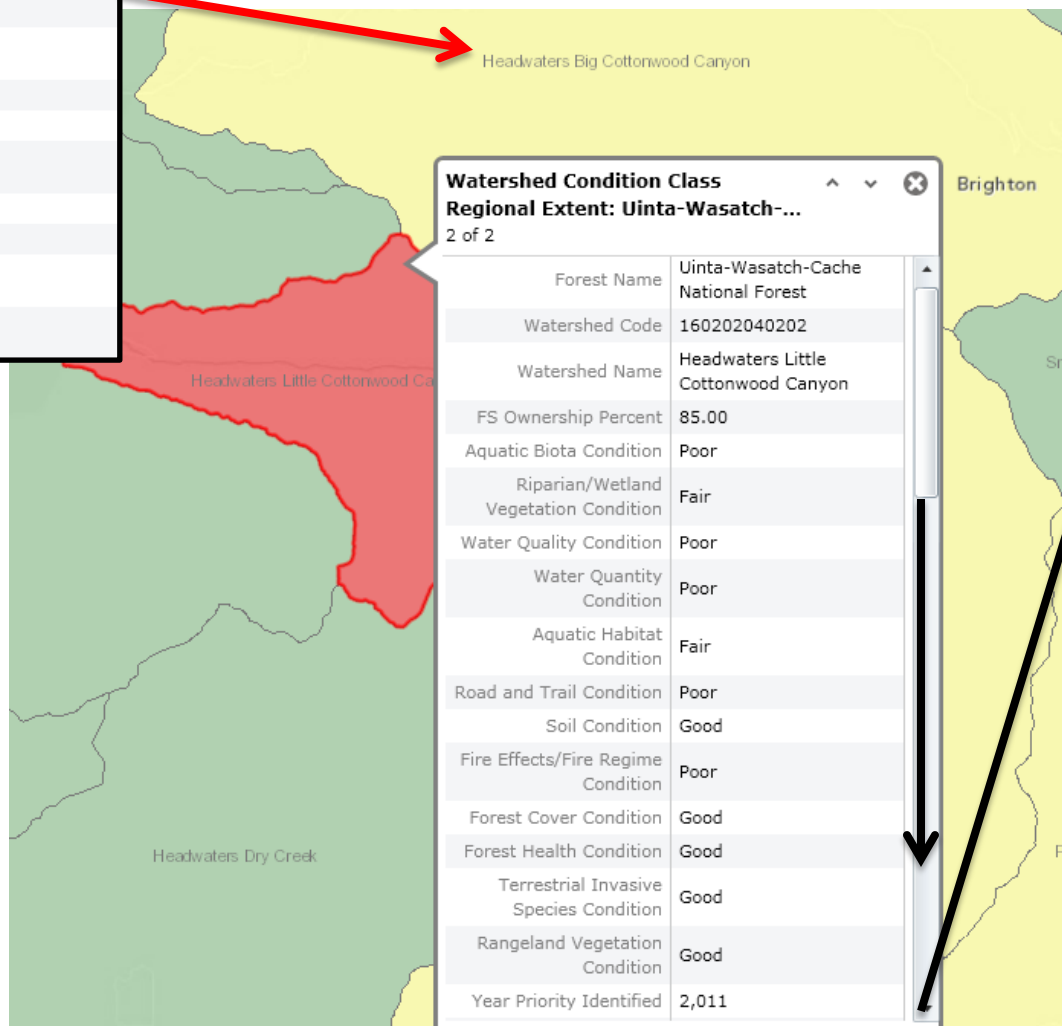
Interest Type: FORMAL ENFORCEMENT ACTION

ID: 8028314

# Watershed Condition Class Regional Extent: Uinta-Wasatch-Cache National...

Forest Name	Uinta-Wasatch-Cache National Forest
Watershed Code	160202040201
Watershed Name	Headwaters Big Cottonwood Canyon
FS Ownership Percent	80.00
Aquatic Biota Condition	Poor
Riparian/Wetland Vegetation Condition	Fair
Water Quality Condition	Good
Water Quantity Condition	Poor
Aquatic Habitat Condition	Fair
Road and Trail Condition	Poor
Soil Condition	Good
Fire Effects/Fire Regime Condition	Fair
Forest Cover Condition	Good
Forest Health Condition	Good
Terrestrial Invasive Species Condition	Good
Rangeland Vegetation Condition	Good

# USFS Watershed Health



Watershed Condition Class	
Regional Extent: Uinta-Wasatch-...	
2 of 2	
Forest Name	Uinta-Wasatch-Cache National Forest
Watershed Code	160202040202
Watershed Name	Headwaters Little Cottonwood Canyon
FS Ownership Percent	85.00
Aquatic Biota Condition	Poor
Riparian/Wetland Vegetation Condition	Fair
Water Quality Condition	Poor
Water Quantity Condition	Poor
Aquatic Habitat Condition	Fair
Road and Trail Condition	Poor
Soil Condition	Good
Fire Effects/Fire Regime Condition	Poor
Forest Cover Condition	Good
Forest Health Condition	Good
Terrestrial Invasive Species Condition	Good
Rangeland Vegetation Condition	Good
Year Priority Identified	2,011

## Priority Watersheds: Uinta-Wasatch-Cache National Forest

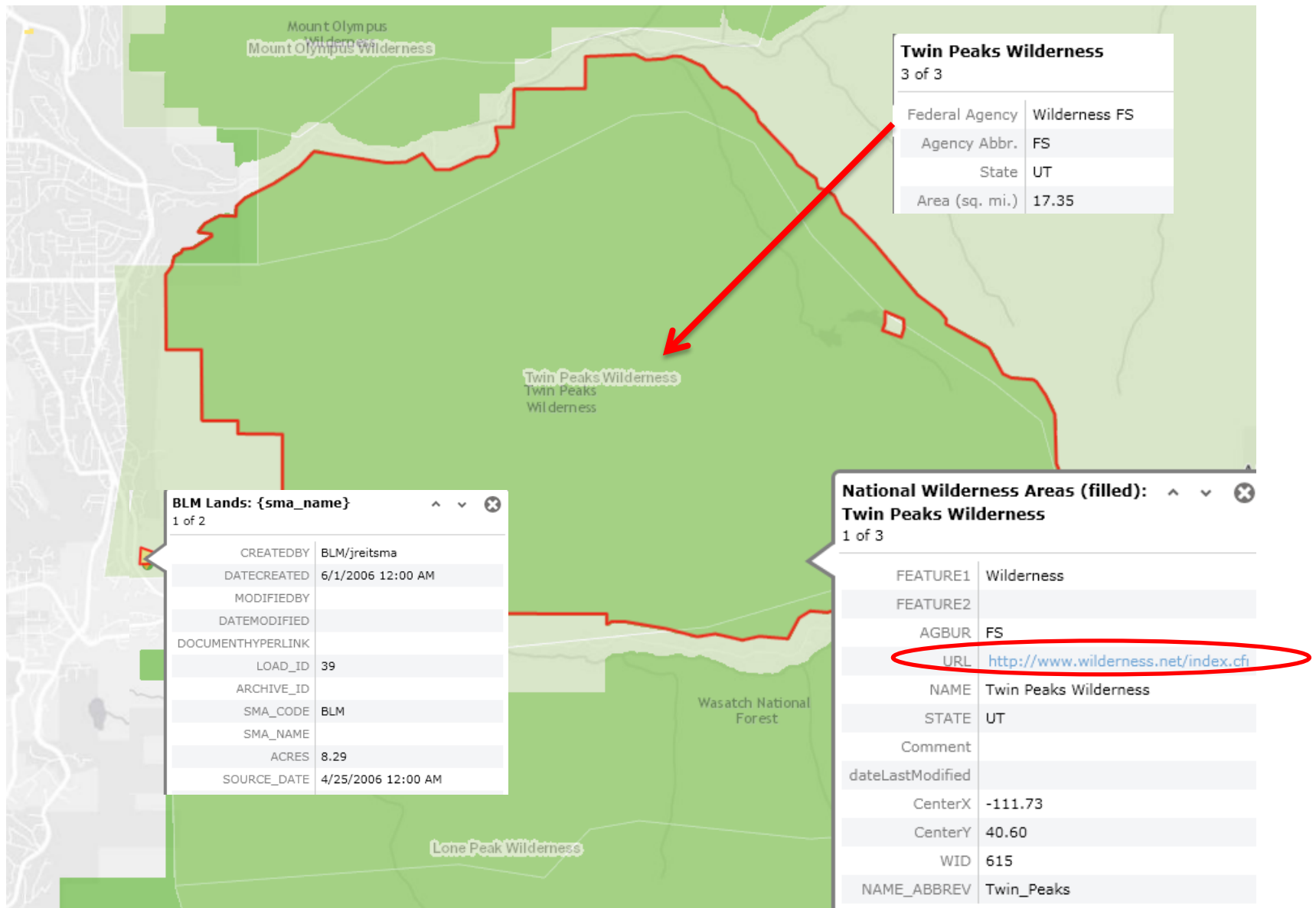
1 of 2

Drinking water supply for Salt Lake Valley (Congressionally designated municipal watershed), Outdoor Recreation, Ski Resorts. Small communities such as Alta and Brighton have developed in these canyons supporting recreation, skiing, and in the past, mining activities. Each of these communities has a character of its own set within aspen and conifer stands. Developed campgrounds, picnic areas, and trailheads are located in the major drainages providing refuge from the summer heat in urban areas below. The watershed is classified as not functioning properly. The main limiting factor for improvement is the because it limits the aquatic productivity of the stream channel. Several culverts create fish barriers. New unauthorized hiking and mountain bike trails located near Little Cottonwood Creek are causing erosion and sedimentation of the stream.

### Selection Narrative

Known Partners	
Approval date	9/30/2011 12:00:00 AM
Estimated Completion Date	9/30/2017 12:00:00 AM
Essential Project Count	14
Essential Project Estimated Cost	234,000.00
Actual Completion Date	
Watershed Restoration Action Plan Indicator	Y

# US Federal Lands & US Wilderness Areas



## Twin Peaks Wilderness

General

Contacts

Area Management

Wilderness Laws

Links

Blogs



Credit:  
Utah Wilderness Association

### Introduction

The United States Congress designated the Twin Peaks Wilderness ([map](#)) in 1984 and it now has a total of 11,396 acres. All of this wilderness is located in [Utah](#) and is managed by the Forest Service.

### Planning to Visit the Twin Peaks Wilderness?

- [Print a fact sheet](#)
- [General things to consider when visiting any wilderness](#)
- [Regulations](#)
- [Contact the Forest Service](#)
- [Visit the National Forest wilderness website](#)

### Leave No Trace

How to follow the seven standard Leave No Trace principles differs in different parts of the country (desert vs. Rocky Mountains). Click on any of the principles listed below to learn more about how they apply in the Twin Peaks Wilderness.

1. [Plan Ahead and Prepare](#)
2. [Travel and Camp on Durable Surfaces](#)
3. [Dispose of Waste](#)

### Description

Twin Peaks Wilderness forms a part of the dramatic backdrop you see on the east side of the Salt Lake Valley, southeast of Salt Lake City. Originally carved by glaciation and currently remodeled by erosion, this area consists of narrow canyons and high peaks (including Twin Peaks, Superior Peak, and Dromedary Peak) that combine to form a rugged and spectacular display. Elevations range from just under 5,000 feet to 11,319 feet on Twin Peaks. Much of the higher terrain is classified as alpine and characterized by large cirque basins and exposed rocky ridges.

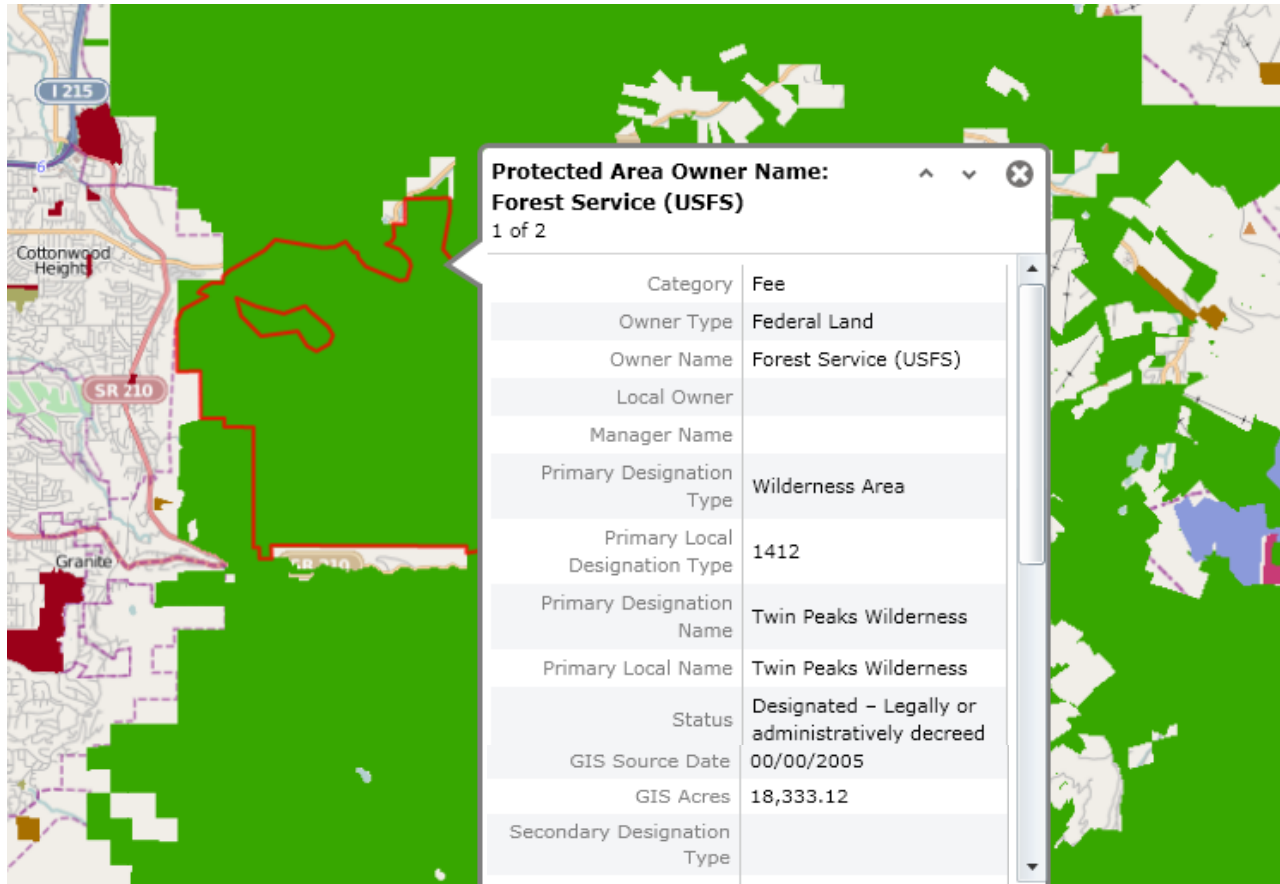
Dense mountain brush mixed with oak/maple and grass dominates the vegetation at lower elevations. There are scattered stands of firs and aspen in the mid to higher elevations. Temperatures with a 50-degree difference between summer highs and lows can occur. Snow can remain in some parts of the wilderness until midsummer.

# Protected Areas Database of the United States (PADUS)





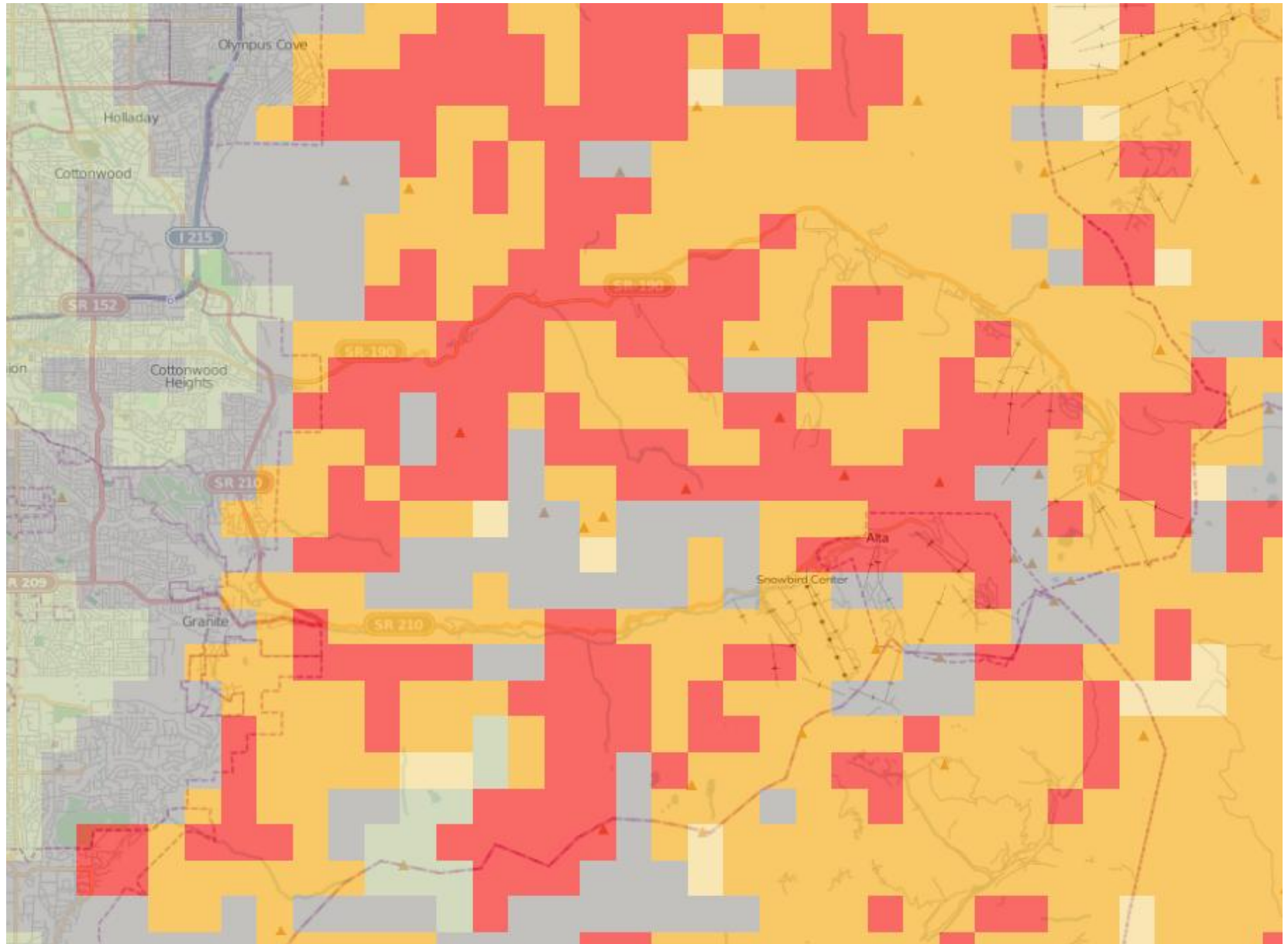
# Protected Areas Database of the United States (PADUS)



The image shows a map of a protected area in the United States, with a data popup window overlaid. The map displays a green area representing the protected land, with roads and other features visible. The popup window is titled "Protected Area Owner Name: Forest Service (USFS)" and shows 1 of 2 records. The data is organized into a table with two columns: Category and Fee.

Category	Fee
Owner Type	Federal Land
Owner Name	Forest Service (USFS)
Local Owner	
Manager Name	
Primary Designation Type	Wilderness Area
Primary Local Designation Type	1412
Primary Designation Name	Twin Peaks Wilderness
Primary Local Name	Twin Peaks Wilderness
Status	Designated – Legally or administratively decreed
GIS Source Date	00/00/2005
GIS Acres	18,333.12
Secondary Designation Type	
Secondary Local Designation	Intermountain Region
Secondary Local Name	
GAP Status Code	1 - managed for biodiversity - disturbance events proceed or are mimicked
GAP Status Code Source	GAP
GAP Status Code Date	2005
IUCN Category	Ib: Wilderness areas
Comments	
GIS_ACRES_WEB	809

# USGS/USDA Wildfire Potential





A small decorative graphic in the top-left corner consisting of a horizontal bar with a gradient from dark grey to light grey.

## **Census and Socioeconomic Layers**

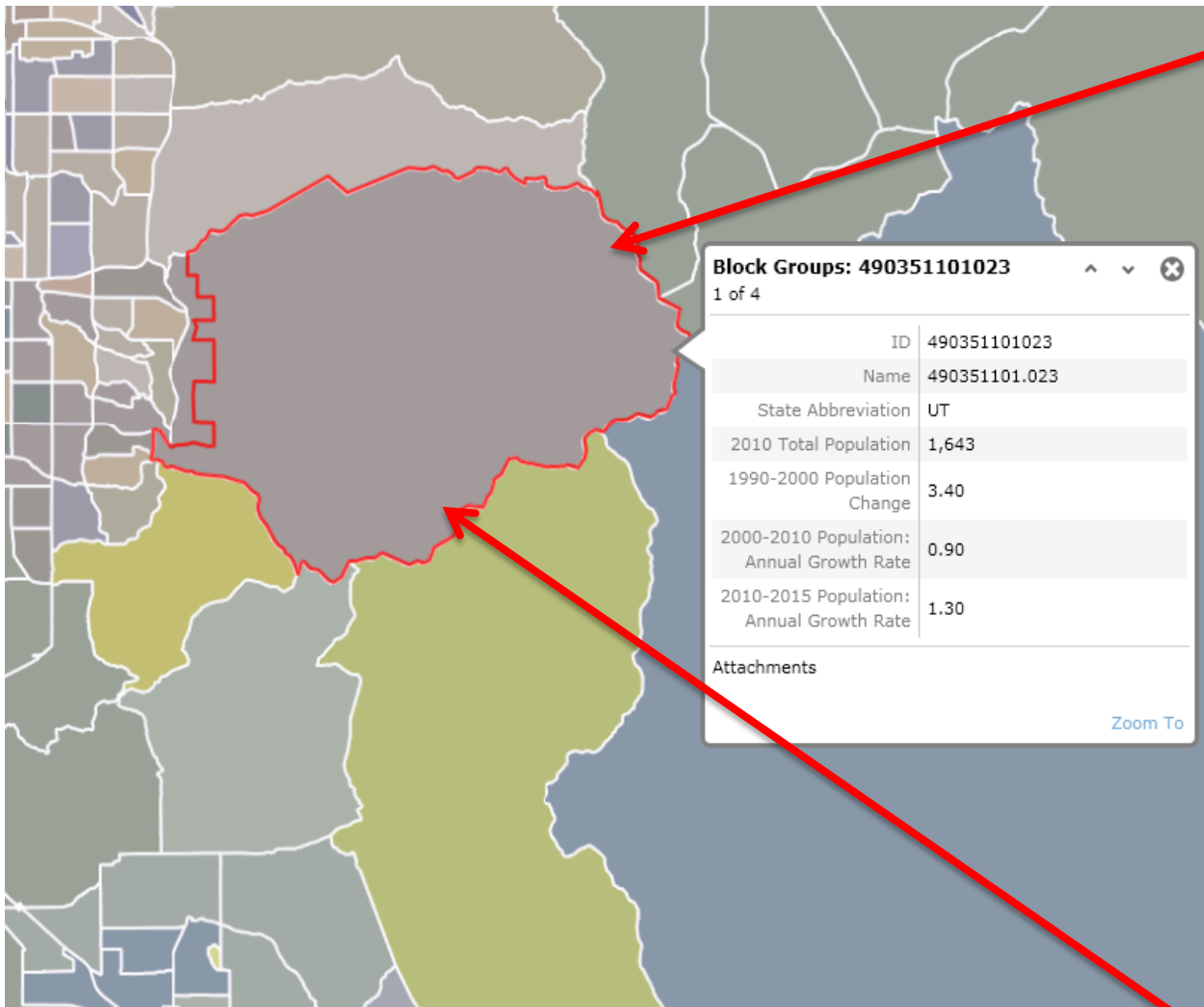
USA Social Vulnerability Index

US Labor Force Participation Rate

US Recent Population Change (2000-2010)

USA Median Household Income

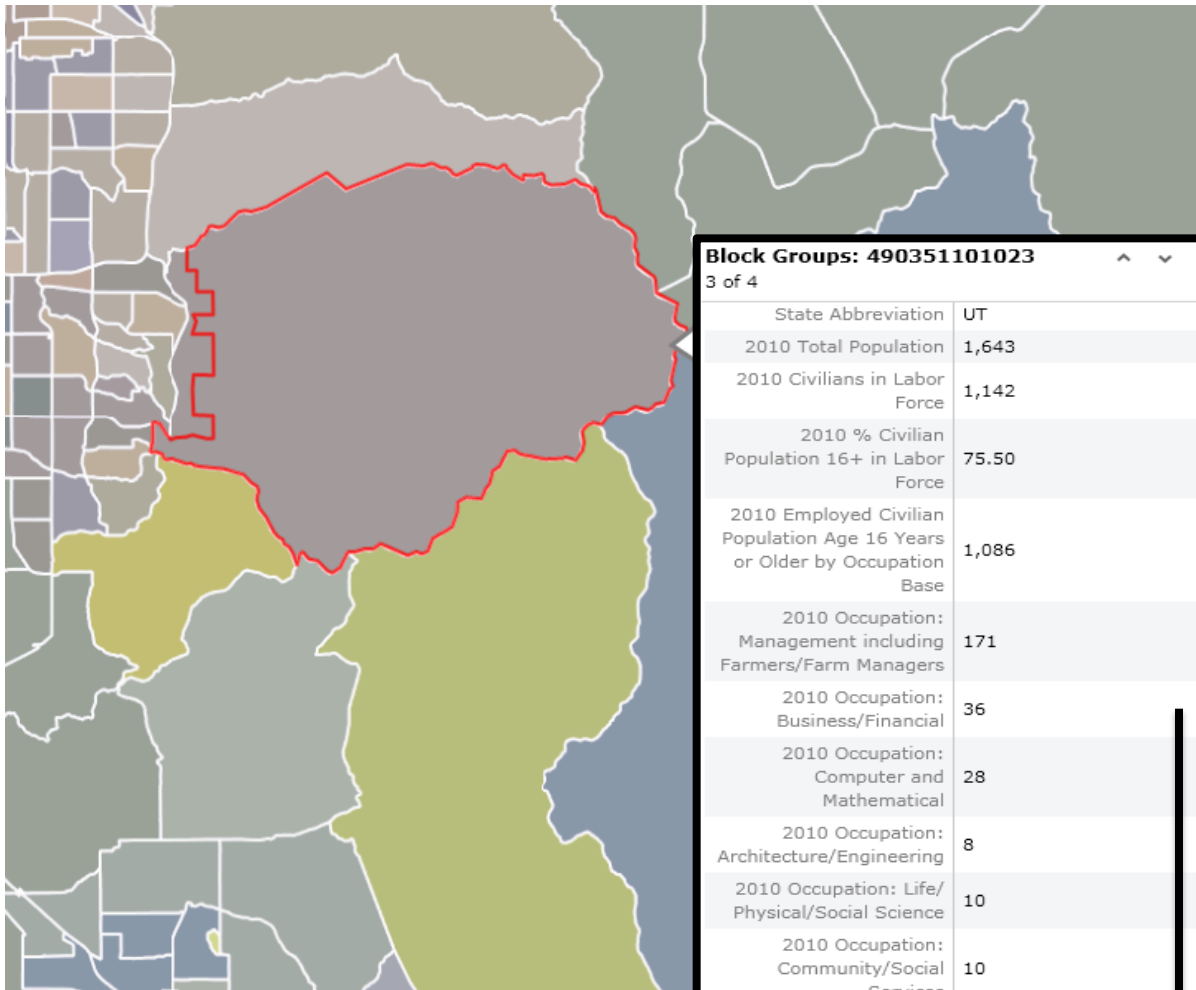
US Unemployment Rate (2010)



Block Groups: 490351101023	
1 of 4	
ID	490351101023
Name	490351101.023
State Abbreviation	UT
2010 Total Population	1,643
1990-2000 Population Change	3.40
2000-2010 Population: Annual Growth Rate	0.90
2010-2015 Population: Annual Growth Rate	1.30
Attachments	
<a href="#">Zoom To</a>	

Block Groups: 490351101023	
2 of 4	
State Abbreviation	UT
2010 Total Population	1,643
2010 Median Household Income	133,909
2010 Households by Income Base	506
2010 Household Income less than \$10,000	14
2010 Household Income \$10,000 - \$14,999	3
2010 Household Income \$15,000 - \$19,999	2
2010 Household Income \$20,000 - \$24,999	7
2010 Household Income \$25,000 - \$29,999	11
2010 Household Income \$30,000 - \$34,999	30
2010 Household Income \$35,000 - \$39,999	4
2010 Household Income \$40,000 - \$44,999	6
2010 Household Income \$45,000 - \$49,999	6
2010 Household Income \$50,000 - \$59,999	13

Name	490351101.023
State Abbreviation	UT
2010 Total Population	1,643
2010 Unemployed Population Age 16 Years or Older	56
2010 Unemployment Rate	4.90



**Block Groups: 490351101023** ^ v

3 of 4

State Abbreviation	UT
2010 Total Population	1,643
2010 Civilians in Labor Force	1,142
2010 % Civilian Population 16+ in Labor Force	75.50
2010 Employed Civilian Population Age 16 Years or Older by Occupation Base	1,086
2010 Occupation: Management including Farmers/Farm Managers	171
2010 Occupation: Business/Financial	36
2010 Occupation: Computer and Mathematical	28
2010 Occupation: Architecture/Engineering	8
2010 Occupation: Life/Physical/Social Science	10
2010 Occupation: Community/Social Services	10
2010 Occupation: Legal	19

2010 Occupation: Education/Training/Library	80
2010 Occupation: Arts/Design/Entertainment/Sports/Media	59
2010 Occupation: Healthcare Practitioner/Technician	42
2010 Occupation: Healthcare Support	15
2010 Occupation: Protective Service	27
2010 Occupation: Food Preparation/Serving Related	85
2010 Occupation: Building/Grounds Cleaning/Maintenance	48
2010 Occupation: Personal Care/Service	33
2010 Occupation: Sales/Related	188
2010 Occupation: Office/Administrative Support	94
2010 Occupation: Farming/Fishing/Forestry	3
2010 Occupation: Construction/Extraction	47
2010 Occupation: Installation/Maintenance/Repair	18
2010 Occupation: Production	20
2010 Occupation: Transportation/Material Moving	45

## **So in the 20 minutes it took to conduct this review, we found or evaluated:**

- The existing transportation infrastructure and identified the Metropolitan Planning Organization (Wasatch Front Regional Council (\*link to their website <http://www.wfrc.org/cms/index.php>)
- The Action Area is in Non-Attainment for SOx & PM10
- The majority of the area is wilderness land administered by the USFS, and it is “managed for biodiversity – disturbance events proceed or are mimicked”.
- Water Quality along SR 210 (Little Cottonwood Creek) is impaired by Zinc (exceeding the TMDL), caused by previous mining operations in the area, which is a concern for fish and other aquatic invertebrates (\*2 documents describing the conditions and concerns in detail)
- The Wasatch Watershed which services the Little Cottonwood Creek is a “Priority Watershed” for USFS and is considered to be in “poor” condition due to previous mining operations, induced development from the surrounding ski resorts, outdoor recreation activities including: campgrounds, picnic areas, trailheads, and unauthorized mountain biking trails which are leading to increased sedimentation and erosion. Also, multiple culverts along the waterway have created fish barriers.
- 4 T&E/Candidate Species including 1 bird, 2 fish, and 1 mammal species (\*links to species information, recovery plans, and recovery implementation status)
- Identified 2 places listed on the Historic Register, 1 being the hydro-electric dam along the Big Cotton Creek (SR 190) and 1 a hut within one of the ski resorts.

**\* denotes information obtained through external links**

**Continued...**

## Continued

- Wetlands and Floodplain do not extend far beyond the creeks and streams, other than around Lake Lillian which is located within the Twin Pikes Wilderness Area of Wasatch National Forest.
- The entire range is highly susceptible and at risk for wildfires.
- There is one superfund (NPL) site and two wastewater treatment facilities regulated and in compliance with NPDES
- The area has seen a 3.4% population increase from 2000-2010, bringing its total population to 1,643 with an unemployment rate of 4.90% in 2010. The population is expected to increase by 1.3% annual from 2010-2015. Most of the employment in the region is in Farming (6.7%) and Sales (6%) most likely related to the ski resorts in the area. The Median Household income in 2010 was \$133,909 for 506 households.
- Forest Fragmentation risk exists to the south of the ski resorts.

**And most importantly we can tell what's NOT there:**

- Critical Habitat for T&E Species
- Wild and Scenic Rivers
- Hazardous Material Routes
- Coalbed Methane Resources
- Shale Gas or Oil Resources
- Sole Source Aquifers
- Wildlife Refuges or Hatcheries
- Prime or Unique Farmland
- National Monuments & Landmarks